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KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

RC-54DL
KNET™ Auxiliary Control Panel

P/N: 2900-300130 Rev 1

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Video Products.

Congratulations on purchasing your Kramer **RC-54DL** KNET™ Auxiliary Control Panel, which is designed to let you remotely control an A/V system with ease, in a multimedia classroom or conference room.

Each package includes the following items:

- The **RC-54DL** KNET™ Auxiliary Control Panel
- 3 Gang US Installation mud ring
- Power supply
- This user manual

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2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables

Go to http://www.kramerelectronics.com to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **RC-54DL** away from moisture, excessive sunlight and dust

Caution: No operator serviceable parts inside the unit

Warning: Use only the Kramer Electronics input power wall adapter that is provided with the unit

Warning: Disconnect the power and unplug the unit from the wall before installing

K-NET™ is a proprietary Kramer protocol for interconnecting Kramer units

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3 Overview

The **RC-54DL** is a 3 gang US, auxiliary room controller that acts as an all-in-one extended remote control panel for remotely controlling room controllers (for example, the Kramer **RC-74DL**) in classrooms, boardrooms or auditoriums.

The **RC-54DL** features:

- 12 configurable, RGB backlit, front panel buttons in three groups
- 1 configurable rotary up/down controller with direction indicator LEDs
- Two **K-NET**™ control channels that connect compatible user interfaces and supply power and control data over a single cable
- Flexible control via **K-NET**

k-Config is available from Kramer Electronics on our Web site at http://www.kramerelectronics.com/support/?soft=k-config

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3.1 The RC-54DL KNET™ Auxiliary Control Panel Front Side

This section defines the **RC-54DL**:

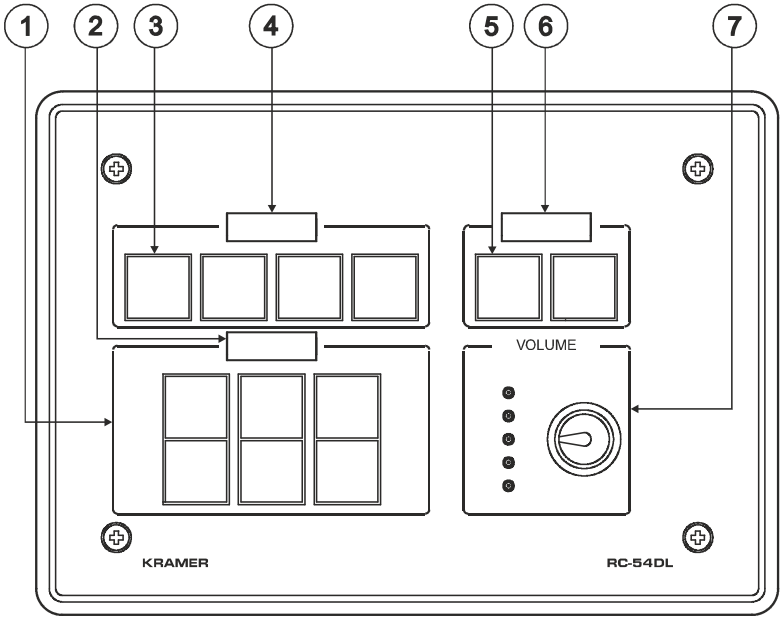

Figure 1: RC-54DL Front Panel

#	Feature	Function
1	6 Configurable Button Switches	Function is programmed by the K-Config Configuration software
2	LCD Label	Displays up to 8 characters at once (set by the K-Config configuration software)
3	4 Configurable Button Switches	Function is programmed by the K-Config Configuration software
4	LCD Label	Displays up to 8 characters at once (set by the K-Config configuration software)
5	2 Configurable Button Switches	Function is programmed by the K-Config Configuration software
6	LCD Label	Displays up to 8 characters at once (set by the K-Config configuration software)
7	Rotary Dial up/down LED indicator	Indicates the level set by the rotary dial
	VOLUME Rotary Dial	Function is programmed by the K-Config Configuration software

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3.2 The RC-54DL KNET™ Auxiliary Control Panel Rear Side

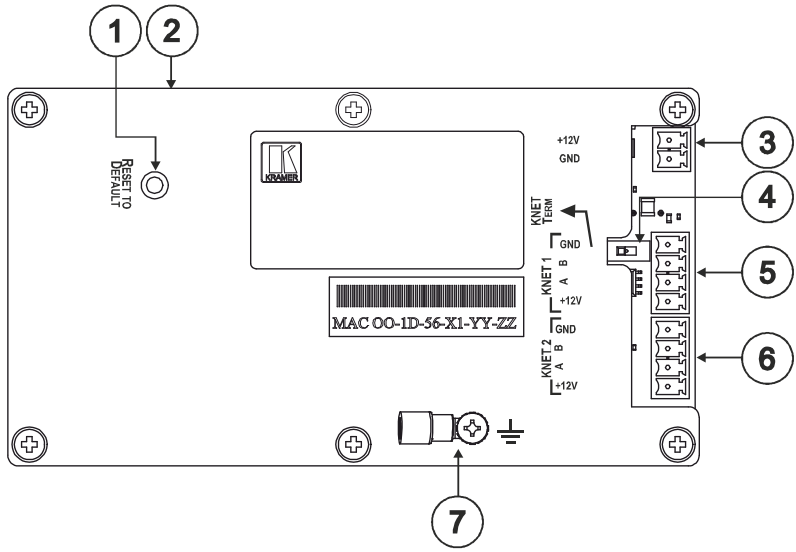

Figure 2: RC-54DL Rear Panel

#	Feature	Function
1	*RESET TO DEFAULT* Button	Disconnect the power and then connect it while pressing the RESET TO DEFAULT button (using a small screwdriver). The unit will power up and load its memory with the factory default KNET ID auxiliary setting (ID=2). This operation should be carried out by authorized Kramer technical personnel or by a qualified system integrator, and requires removal of the device from the wall by unscrewing the four wall mount screws
2	*PROGRAM (USB)* Connector	Connect to a computer for firmware upgrade or setting the K-NET ID number
3	Power Supply 2-pin Terminal Block Connector	Connect to power supply (when power is not supplied over the K-NET) Connect GND to GND, +12V to +12V
4	*K-NET TERM* Switch	Slide to the left (in the direction of the arrow) for K-NET termination, slide to the right up to leave bus unterminated. The last physical device on a K-NET bus must be terminated
5	*K-NET1* Connector	Connect the GND pin to the Ground connection; pin B (-) and pin A (+) are for RS-485, and the +12V pin is for powering the unit The ground connection is sometimes connected to the shield of the RS-485 cable
6	*K-NET2* Connector	Connect the GND pin to the Ground connection; pin B (-) and pin A (+) are for RS-485, and the +12V pin is for powering the unit The ground connection is sometimes connected to the shield of the RS-485 cable
7	Ring Tongue Terminal Grounding Screw	Connect to grounding wire (optional), (see Section 5)

4 Connecting the RC-54DL KNET™ Auxiliary Control Panel

Always switch off the power to each device before connecting it to your Transmitter and Receiver pair. After connecting your Transmitter and Receiver pair, connect their power and then switch on the power to each device.

To connect the **RC-54DL**, as shown in the example in Figure 3, do the following:

1. Connect the K-NET ports to any **RC** devices with K-NET (for example, the **RC-63DL** and **SL-12**).

2. Connect the 12V DC power adapter to the **RC-54DL** power socket and to the mains electricity (not shown in Figure 3).
   Alternatively, the **RC-54DL** can receive power over the K-NET port via the connected master room controller.

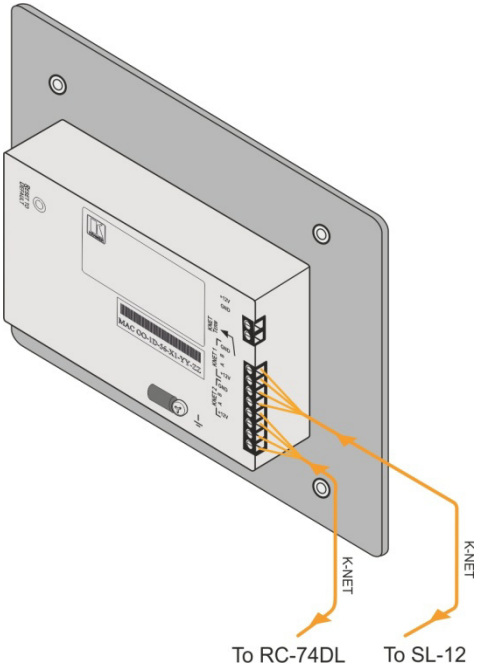

Figure 3: Connecting the RC-54DL

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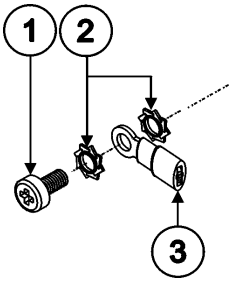
5 Grounding the RC-54DL

The grounding screw is used to earth the chassis of the unit to the building ground preventing static electricity from impacting the performance of the unit.

Figure 4 defines the grounding screw components.



#	Component Description
1	M3X6 screw
2	1/8" Toothed Lock Washer
3	M3 Ring Tongue Terminal

Figure 4: Grounding Connection Components

To ground the RC-54DL:

1. Connect the Ring Tongue terminal to the building grounding point wire (it is recommended to use a green-yellow AWG#18 (0.82mm^2) wire, crimped with a proper hand-tool).
2. Insert the M3x6 screw through the toothed lock washers and the tongue terminal in the order shown above.
3. Insert the M3x6 screw (with the two toothed lock washers and ring tongue terminal) into the grounding screw hole and tighten the screw.

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6 Operating the RC-54DL

Since the auxiliary panel is used as a remote controller for Master Room Controllers via the proprietary communication channel K-NET (as illustrated in Figure 5):

- It requires a K-NET connection to a Master Room controller (for example, the Kramer **RC-74DL** Master Room Controller)
- The auxiliary panel can be programmed only via the Master Room controller

For instructions on using the software, see the *K-Config Software Guide* available from our Web site. Once configured, use the front panel buttons as a remote controller for the connected master room controllers.

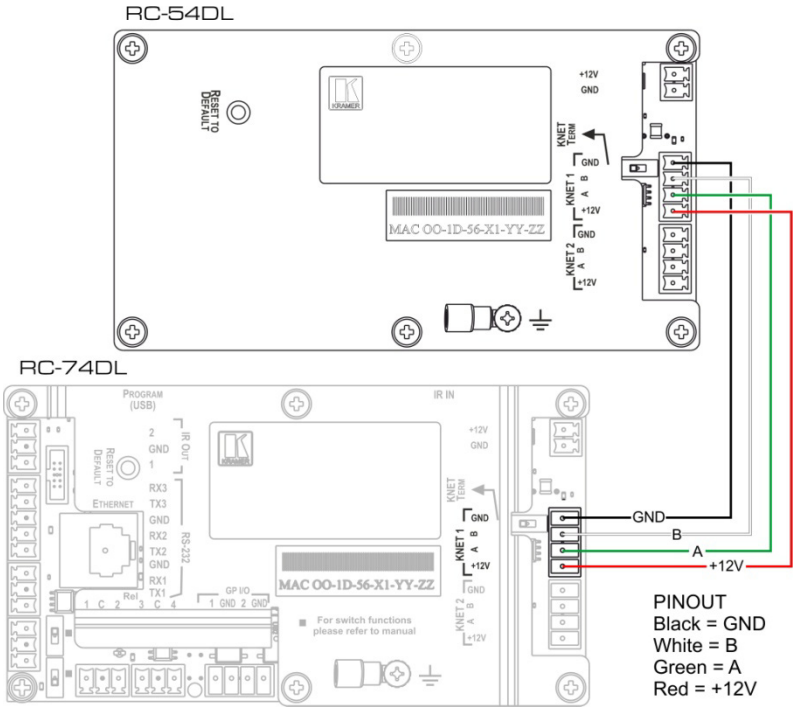
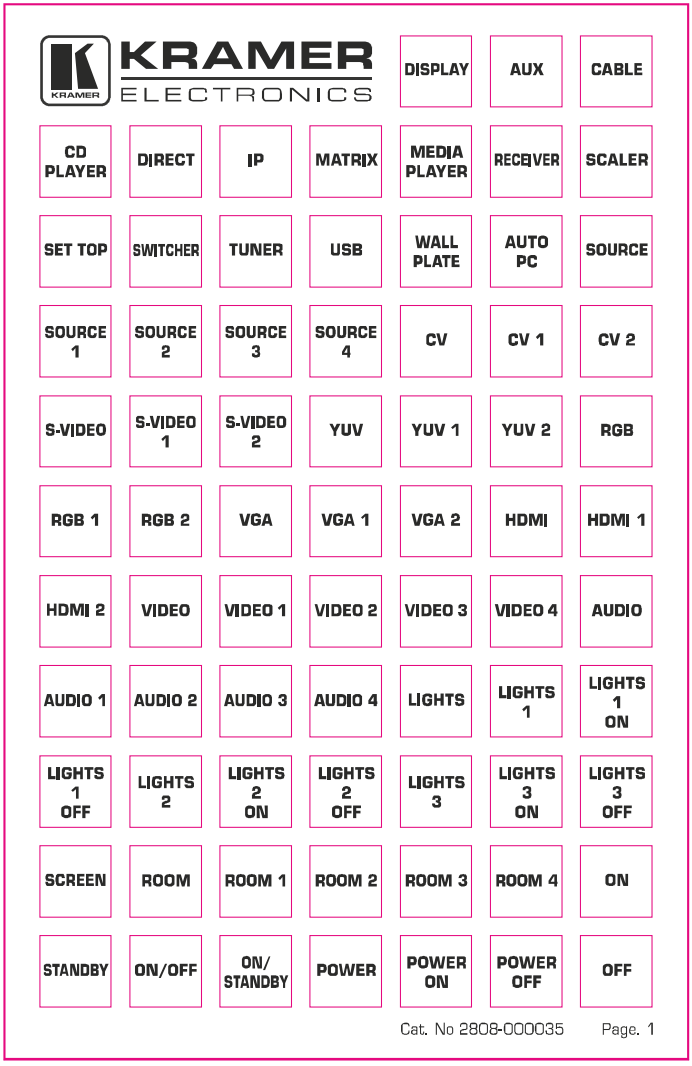
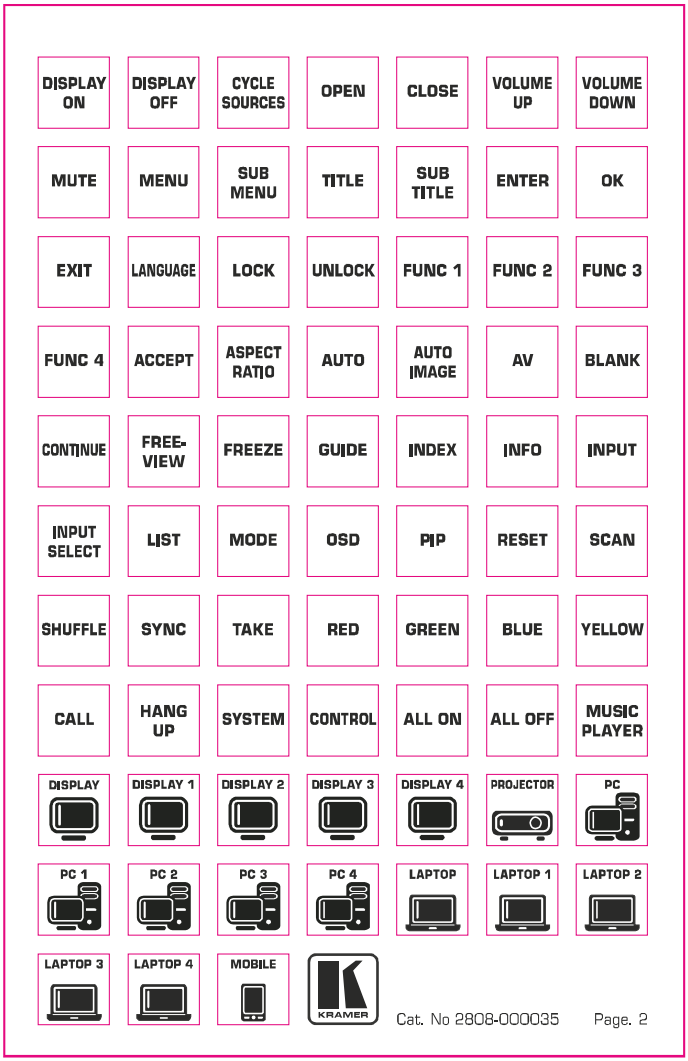


Figure 5: RC-54DL to RC-74DL Pinout Connection

7 Front Panel Button Caps and Labels

The **RC-54DL** is supplied with a button label sheet and 12 clear, button caps to house the labels. Figure 6 illustrates a sample button label sheet.





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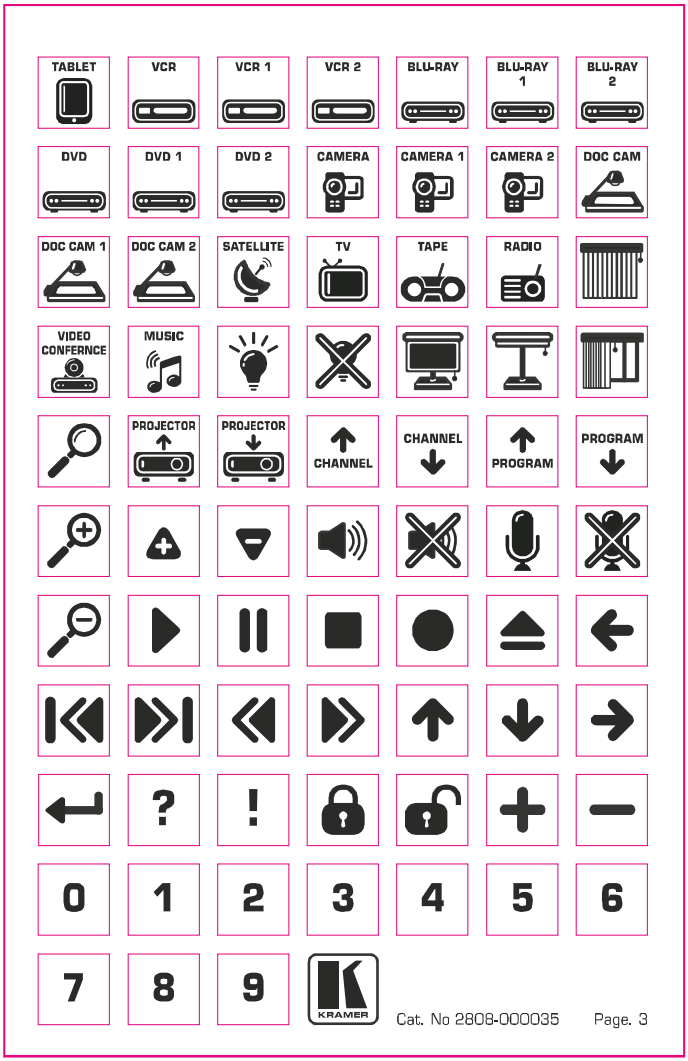


Figure 6: Sample Button Label Sheet

7.1 Installing the Front Panel Button Caps, Labels

To install the button caps and labels:

1. Remove the required labels from the supplied button label sheet.
2. Hold the button cap so that it is oriented as shown in Figure 7 with the "wings" on the left and right sides.

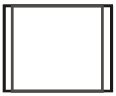
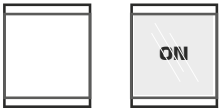


Figure 7: Button Cap Orientation

3. Insert the label inside the cap.

Figure 8: Button Cap Orientation with Label

Note that the button cap for the top left-most button on the front panel should be oriented with the "wings" at the top and lower sides as shown below (without / with label):



and then placed over the top left-most button, as illustrated in Figure 9

4. Retaining the orientation, place the button cap over the buttons of the **RC-54DL**.

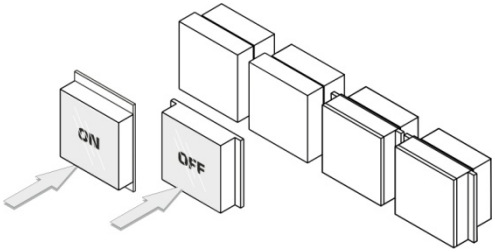


Figure 9: Placing the Button Cap

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5. Repeat for all caps (all horizontally oriented except for the top left button).
6. Remove the protective foils from both sides of the Perspex (acrylic glass) windows.
7. Place the faceplate on the **RC-54DL** so that the four screw mounting holes are aligned.
8. Insert the four mounting screws and tighten with a screwdriver.
9. Install the volume control knob.

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8 Technical Specifications

PORTS:	2 K-NET on terminal block connectors; 1 USB for programming
POWER SOURCE:	12V DC, 420mA
OPERATING TEMPERATURE:	0° to +55°C (32° to 131°F)
STORAGE TEMPERATURE:	-45° to +72°C (-49° to 162°F)
HUMIDITY:	10% to 90%, RHL non-condensing
DIMENSIONS:	16.2cm x 2.6cm x 11.4 (6.4" x 1.0" x 4.5") W, D, H
WEIGHT:	0.6kg (1.4lbs) approx.
ACCESSORIES:	Power supply
Specifications are subject to change without notice Go to our Web site at http://www.kramerelectronics.com to access the list of resolutions	

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LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at www.kramerelectronics.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

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THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

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This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at www.kramerelectronics.com or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.

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We welcome your questions, comments, and feedback.
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SAFETY WARNING
Disconnect the unit from the power supply before opening and servicing

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